accuracy. By studying the electrode phenomena and other sources of error and correcting them we have now reached a precision of 0.001 per cent. and an accuracy of about 0.01 per cent. The details of all this work will appear shortly in another article.[4]

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PROCEEDINGS OF THE AMERICAN PHYSICAL SOCIETY

MINUTES OF THE SAN FRANCISCO MEETING

The seventy-eighth meeting of the American Physical Society was held at San Francisco, August 2 to 7, 1915. It was a joint meeting with Section B of the American Association for the Advancement of Science. The programs of the meeting on Tuesday, Wednesday and Thursday were in charge of the committee of the Pacific Coast division of the American Association for the Advancement of Science, of which Professor Fernando Sanford was chairman, and those of Friday were in charge of the Physical Society, President Merritt presiding. The meeting on Wednesday was held at Stanford University, Palo Alto. All other sessions for the reading of physics papers were held at the physical laboratory of the University of California, Berkeley. General sessions of the American Association for the Advancement of Science were held in San Francisco.

The following papers were presented:

Tuesday Afternoon—Spectroscopy

(1) "A Summary of the Leading Features of Electric Furnace Spectra"; (2) "The Spectrum of the 'Tube-arc' and a Comparison with Line Dissymmetries in Spark Spectra," by Arthur S. King.

"Review of Laboratory Studies of the Zeeman Effect, at Mount Wilson Solar Observatory," by Harold D. Babcock.

"Pole Effect in the Arc and Its Relation to Other Investigations," by Charles E. St. John and Harold D. Babcock.

"The Efficiency of Astronomical Spectrographs," by Joseph Moore.

Wednesday Afternoon (at Stanford University)

"Discussion and Demonstrations of High Potential Electric Currents," by Harris J. Ryan.

[4] See Taylor's address before the Physical Chemical Section of the American Chemical Society, New Orleans, April 1–3, 1915, and *Physical Review*, 6, 61 (1915).

Thursday Forenoon and Afternoon—Physics of the Air

"The Thunderstorm," by W. J. Humphreys.

"New Concepts in Aërology," by A. G. McAdie.

"The Application of Physical Principles to Problems Suggested by Oceanic Circulation and Temperatures," by George F. McEwen.

"Radiation and the Atmosphere," by C. G. Abbot.

"Solar Radiation and Terrestrial Magnetism," by L. A. Bauer.

"On the Origin and Maintenance of the Earth's Negative Charge," by W. F. G. Swann.

"The Natural Charges of the Elements," by Fernando Sanford.

Friday Forenoon and Afternoon

"Thermo-electric Properties of Alloys of Bismuth and Tin," by A. E. Caswell.

"On the Free Vibrations of a Lecher System IV." (By title.) By F. C. Blake and Charles Sheard.

"Resistance of a Spark Gap," by W. P. Boynton.

"On the Resolving Power of Photographic Plates," by Orin Tugman.

"Sensitive Moving-coil Galvanometers," by Frank Wenner and Ernest Weibel.

"An Experimental Verification of the Law of Variation of Mass with Velocity for Cathode Rays," by Lloyd T. Jones.

"The Oxide Resistance Thermometer," by S. L. Brown.

"New Form of Radiation Pyrometer," by S. L. Brown.

"Electromotive Forces in Isothermal Metallic Circuits," by Gilbert N. Lewis.

"A New Method of Determining the Amplitude of Sound Vibrations in Air with Demonstration," by E. P. Lewis.

"An Application of the Koch Registering Microphotometer for Measuring the Sharpness of Photographic Images," by Orin Tugman.

"Photographic Study of the Tone of the Violin," by D. C. Miller.

"The Variation of the Photoelectric Current with the Angle of Emission," by Willard Gardner.

"A Quantitative Determination of the Earth's Penetrating Radiation," by C. H. Kunsman.

"Ultra-violet Absorption Spectra," by R. L. Sebastian.

"The Ultra-violet Spectra of Krypton and Xenon," by E. P. Lewis.

"The Law of Cohesion in Mercury," by P. A. Ross.

"Note on the Theory of Ionization by Collision," by W. P. Roop.

"Heat Losses from Incandescent Filaments in Air," by L. W. Hartman.

"Magnetic Field Produced by Rotating Solid Conductors in a Magnetic Field." (Read by abstract.) By S. R. Williams.

Many physicists accepted the invitation to attend a joint meeting of Section A, the American Mathematical Society and the American Astronomical Society Tuesday forenoon to hear addresses on "The Human Significance of Mathematics," by C. J. Keyser, Columbia University, and "The Work of a Modern Observatory," by G. E. Hale, Mt. Wilson Observatory, Pasadena. Professor Hale's address was illustrated by interesting experiments on vortex motion.

Several instructive demonstrations were arranged by Professor E. P. Lewis, some of them at the request of Dr. Hale, where they could conveniently be examined between sessions. Among them were: Professor Stebbins's photoelectric cell for stellar photometry; the Zeeman effect with echelon grating, Fabry and Perot étalon and Lummer and Gehrecke plate; mercury fringes with Fabry and Perot interferometer; the amplitude of sound vibrations made visible by the forced vibrations of lycopodium particles.

Tuesday noon visiting physicists, astronomers and mathematicians and accompanying ladies were the guests of Professors E. P. Lewis, Haskell and Leuschner, at the luncheon at the Faculty Club, University of California.

Wednesday evening, immediately after the return from Stanford University, the physicists dined together at Jules Café, San Francisco. Attendance about thirty.

During the week many found opportunity to visit the exhibit of the National Bureau of Standards at the Panama-Pacific International Exposition, and some to make an excursion to the Lick Observatory at Mt. Hamilton, where the activities of the institution were explained by the astronomers in charge.

At the final session, a hearty vote of thanks was extended to the Pacific Coast Committee for the excellent arrangements made for the meetings, to the authorities of the University of California and of Stanford University for the accommodations provided and especially to the physics staff of the two institutions for the many courtesies extended by them.

A. D. COLE,
Secretary

ANNUAL MEETING OF THE AMERICAN GENETIC ASSOCIATION

THE American Genetic Association held its twelfth yearly meeting at Berkeley, Calif., August 2–6, in connection with the American Association for the Advancement of Science. More than three hundred persons attended the various conferences of the association.

The opening general meeting was held on Tuesday morning, August 3. President David Fairchild, of the U. S. Department of Agriculture, sent an opening address, in which he reminded the association that it had been organized to bring the message of genetics to the layman; to help the research worker to be more practical, and the practical breeder to be more scientific. He continued:

"The American Genetic Association is not primarily to promote research; it is to bring the biologist and the breeder together and help each to learn from the other. In my opinion, the greatest service we can do to genetics is to make its results available to the layman, and I hope to see the American Genetic Association more fully performing this service, year by year. I do not think we have fulfilled this obligation at all times as we should have done. It has been a constant temptation to coin new words, to invent methods of expressing our ideas in algebraical symbols, to present our researches in statistical form which made them a closed book to the practical breeder. All these methods are of use for the publication of original research, but in my opinion they must be supplemented by a simple account in plain English, for the benefit of those who are following our science, seeking its teaching for their own profit. They are calling on us to give them the light of science, and it is wicked to obscure this light by pedantry. I have no patience with those men of science who think their work loses dignity if it is put in simple English and made understandable to the layman. That was not the manner of Darwin, or of the other leaders of scientific thought in his generation; and if modern biology has less of a hold on the masses to-day than it had thirty years ago, if the teachings of biologists are less eagerly heard, I think we have ourselves largely to blame, and the custom which has insidiously grown on us, of describing our work in an esoteric terminology.

"I earnestly hope that the American Genetic Association can break away from this current, and stand forth as an exponent of real popularization of science. I believe the branch of science which